DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY MEDICAL COMMAND
2050 WORTH ROAD
FORT SAM HOUSTON, TEXAS 78234-6000

REPLY TO
ATTENTION OF

DASG-PPM-NC

10 June 2002

MEMORANDUM FOR Commanders, US Army Medical Command Major Subordinate Commands

SUBJECT: The US Army Heat Injury Prevention Program

1. References:

a. FM 21-10, Field Hygiene and Sanitation, 21Jun 00

b. FM 4-25.12 (21-10-1), Unit Field Sanitation Team, 25 Jan 02

c. FM 4-10.17, Preventive Medicine Services, 28 Aug 00

d. "Clinical Diagnosis, Management, and Surveillance of Exertional Heat Illness," John W. Gardner and John A. Kark, in *Deployment Health (*Textbook of Military Medicine Series) Washington, D.C.: the Borden Institute, 2001, pp. 231-279.

2. The 2002 heat injury season has begun. Heat injury and illness continue to pose a significant health threat to soldiers. I have reviewed the recent Army data on heat injuries and am committed to making improvements in the Army Heat Injury Prevention Program (HIPP). My vision for the Program this year (see enclosure) and my challenge to the AMEDD can be summed up in the words: LEARN, COORDINATE, LEAD, and CONTRIBUTE. LEARN about heat injury, COORDINATE with leaders and commanders, LEAD the medical mission in the field and at training sites, and CONTRIBUTE scientifically back to the system.

3. MEDCOM and the AMEDD have dual responsibilities to the Army HIPP. The AMEDD is responsible for supporting commanders in their efforts to protect soldiers against heat injury and also bears the responsibility to provide the best possible care for soldiers who succumb to the heat. Over the last several years, new doctrine and guidance has been published, as referenced above. The Army HIPP is based on sound science and incorporates state-of-the art best practices.

4. The US Army operational tempo has increased significantly. Training requirements have increased in turn. Our soldiers are training and deploying to areas where proper instruction in heat injury prevention can be life-saving and may make the difference in successful completion of the mission.

5. Point of contact is: LTC Regina Curtis, Preventive Medicine Staff Officer, Proponency Office for Preventive Medicine, Office of the Surgeon General, DSN 761-3017, Commercial (703) 681-3017; e-mail Regina.Curtis@otsg.amedd.army.mil.

6. Force health protection and the safety of every US Army soldier is the mission of the US Army MEDCOM. Your dedication to this mission is essential.

Encl

JAMES B. PEAKE
Lieutenant General
Commanding

CF:
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GUIDANCE ON ACHIEVING THE GOALS OF THE 2002 HEAT INJURY PREVENTION PROGRAM:
LEARN, COORDINATE, LEAD, COOPERATE

1. Heat injury remains a significant health problem for our army. From 1992-2001, 1433 soldiers were admitted to the hospital for treatment of heat injury. From 1997-2001, 5833 soldiers were treated in clinics for heat injuries.

2. Heat injuries are preventable. AMEDD is responsible for supporting commanders in their efforts to protect soldiers against heat injury and also bears the responsibility to provide the best possible care for soldiers who succumb to the heat.

3. After reviewing the surveillance on heat injury and the updates to the Army Heat Injury Prevention Program (HIPP), my guidance to successfully meet the challenge of the 2002 Army Heat Injury Prevention Program includes:

LEARN

- Successful introduction of new doctrine and the elimination of older, less optimal practices.

- Familiarity with and use of the excellent research and information products available from US Army Research Institute of Environmental Medicine (USARIEM), US Army Center for Health Promotion and Preventive Medicine (CHPPM), and the US Army Safety Center (ASC).

- There are significant changes in some fundamental preventive measures (e.g., conditioning, fluid replacement, acclimatization, etc). Familiarize yourself with the new guidance and emphasize the changes to your staff.

- Treatment protocols have been refined to reflect best practices as assessed by clinical evidence. A comprehensive summary of the most current knowledge on heat illness is contained in Reference #4. This reference must be read, incorporated into clinical treatment protocols, and used for reference and study.

- Environmental research from USARIEM and population-based research from CHPPM constitute the scientific basis for the recommended policies. These agencies stand ready to assist with training aids and expert information. Make use of these resources; their contact information is included below.

COORDINATE

- Healthcare providers at all levels must coordinate their efforts to achieve consistent application of recommended treatment protocols and appropriate, timely hand-off between levels of patient care using identified best practices - producing an optimum healthcare environment for the patient.

- Read the ALARACT summary that will be issued Army-wide simultaneously with this memo as a guide to leaders and unit commanders. Assist them in understanding doctrine, in its implementation, and in creating specific steps that they can take to reduce heat injury.

- RMC Commanders must compare treatment protocols among their institutions to: (1) develop consensus, (2) ensure compliance with doctrine and best practices, (3) promote full reporting, and (4) coordinate the direction of heat injury patient care throughout levels of care at their medical facilities.

LEAD

- Cooperate with and guide line commanders: help them understand doctrine and assist them in its implementation. Encourage them to report all heat injury cases and any concerns they have in implementing doctrine.

- Preventive Medicine must take the lead in fielding new doctrine, in strengthening the scientific principles on which the HIPP is based, and in taking the preventive mission to the troops in the field and in training situations as the Army medical experts on occupational soldier health.

- RMC Commanders and Directors of Health Services at all MEDCOM facilities must review and practice ambulance and evacuation protocols specific to heat injury and ensure that commanders and unit leaders are familiar with them.

- Preventive Medicine assets are the MEDCOM subject matter experts. They must monitor local prevention efforts in the field for currency and coordinate the reporting of all heat injury cases.

CONTRIBUTE

- Our prevention products cannot be improved without comprehensive surveillance. Enhancing reporting at all levels is my particular task to you this heat injury season.

- Command Surgeons should ensure that current doctrine reaches the key leaders. As MEDCOM assets closest to troops in training and operations, you are positioned to closely monitor, evaluate, and contribute to the success of the HIPP. A report from each of you to the CHPPM at the close of the heat injury season (NLT 15 October 2002) will help MEDCOM refine the HIPP.

POINTS OF CONTACT AND REFERENCE

The U.S. Army Center for Health Promotion and Preventive Medicine can be reached at commercial (410) 436-2464, DSN: 584-2464. Its web page <http://chppm-www.apgea.army.mil/> has a collection of heat injury prevention resources. The US Army Safety Center (e-mail: http://safety.army.mil) publishes a monthly bulletin on safety measures. Each April issue addresses heat injury prevention. (E-mail: Countermeasure@safety.army.mil). The US Army Institute of Environmental Medicine (USARIEM) can be reached at comm.: (508) 233-4849/5665, DSN: 256-xxxx.

REFERENCES

1. FM 21-10, Field Hygiene and Sanitation, 21Jun 00

2. FM 4-25.12 (21-10-1), Unit Field Sanitation Team, 25 Jan 02

3. FM 4-10.17, Preventive Medicine Services, 28 Aug 00

4. "Clinical Diagnosis, Management, and Surveillance of Exertional Heat Illness," John W. Gardner and John A. Kark, in *Deployment Health* (Textbook of Military Medicine Series) Washington, D.C.: the Borden Institute, 2001, pp. 231-279

10JUN02

ALARACT MESSAGE:

SUBJ: HEAT INJURY PREVENTION

1. REFERENCES.
   A. FM 21-10 FIELD HYGIENE AND SANITATION (JUNE 2000)
   B. FM 4-25.12 (21-10-1) UNIT FIELD SANITATION TEAM (JANUARY 2002)
   C. "COUNTERMEASURES," US ARMY SAFETY CENTER BULLETIN (APRIL 2002)
   D. SPECIAL OPERATIONS FORCES MEDICAL HANDBOOK (JUNE 2001)

2. HEAT INJURIES ARE PREVENTABLE. LEADERS ARE RESPONSIBLE FOR THE HEALTH OF SOLDIERS. THEY MUST IDENTIFY HEAT INJURY HAZARDS AND TAKE APPROPRIATE ACTION TO REDUCE OR ELIMINATE THEM. USE THE UPDATED REFERENCES ABOVE FOR THE LATEST GUIDANCE ON HOW TO ANTICIPATE, PREVENT, AND MANAGE THE ADVERSE HEALTH EFFECTS OF HEAT STRESS. ENSURE THAT THE CURRENT FLUID REPLACEMENT GUIDELINES (REFERENCE 1.A) ARE DISTRIBUTED TO ALL LEADERS. REPLACE OUTDATED GUIDELINES WHICH MAY PUT SOLDIERS AT RISK FOR HYPONATREMIA.

3. BACKGROUND. HEAT INJURY REMAINS A SIGNIFICANT HEALTH PROBLEM FOR OUR ARMY. FROM 1992-2001, 1433 SOLDIERS WERE ADMITTED TO THE HOSPITAL FOR TREATMENT OF HEAT INJURY. FROM 1997-2001, 5833 SOLDIERS WERE TREATED IN CLINICS FOR HEAT INJURIES. THREE VARIABLES INTERACT TO CAUSE HEAT INJURIES. (1) THE CLIMATE (TEMPERATURE AND HUMIDITY), (2) THE INTENSITY OF ACTIVITY, AND (3) INDIVIDUAL RISK FACTORS IN THE SOLDIER, ESPECIALLY THE LEVEL OF FITNESS. HEAT INJURY OCCURS WHEN A PERSON LOSES EXCESSIVE FLUIDS THROUGH SWEATING AND FAILS TO ADEQUATELY REPLENISH WATER AND SALT. THE RISK OF HEAT INJURY IS INCREASED WITH USE OF HEAVY CLOTHING, SUCH AS MOPP GEAR, AND INTENSE OR PROLONGED ACTIVITY. SOLDIERS WHO ARE NOT ADAPTED OR ACCLIMATIZED TO HOT ENVIRONMENTS ARE AT HIGHER RISK FOR HEAT INJURY.

4. COMMANDERS AND LEADERS MUST TAKE THE FOLLOWING ACTIONS TO PREVENT HEAT INJURIES.
   A. DETERMINE THE HEAT CATEGORY (1 THRU 5, WITH 5=HIGHEST RISK) IN THE IMMEDIATE VICINITY OF THE ACTIVITY SITE, MEASURING THE WET BULB GLOBE TEMPERATURE (WBGT) EACH HOUR.
   B. ENFORCE APPROPRIATE WATER INTAKE AND WORK/REST CYCLES FOR THE MEASURED HEAT CATEGORY.

C. MODIFY THE INTENSITY OF THE ACTIVITY AND THE DUTY UNIFORM TO DECREASE THE RISK OF HEAT INJURY (E.G., LOOSENING OR REMOVING HEAVY CLOTHING: INTERMITTENTLY WEARING A SOFT CAP RATHER THAN THE KEVLAR HELMET; AND LIMITING UNNECESSARY STRENUOUS EXERCISE).

D. PLAN CAREFULLY FOR ANY EVENTS INVOLVING SEQUENTIAL DAYS OF HIGH PERFORMANCE TRAINING (SUCH AS AIR ASSAULT, EXPERT INFANTRY BADGE AND EXPERT FIELD MEDICAL BADGE COURSES). MANY PREVENTABLE HEAT INJURIES OCCUR IN CONJUNCTION WITH THESE ACTIVITIES. ALLOW FOR ADEQUATE TRAIN-UP CONDITIONING, AND PLAN ADEQUATE TIME FOR FLUID REPLENISHMENT, REST AND RECOVERY.

5. LEADERS MUST ALSO REMEMBER:

A. SOLDIERS NEED TIME TO ADJUST TO THE HEAT. GRADUALLY INCREASING WORK IN THE HEAT ALLOWS FOR SAFE ADAPTATION TO HOT CLIMATES . FULL ACCLIMATIZATION CAN TAKE UP TO 2 WEEKS. SOLDIERS RECOVERING FROM INJURY OR ILLNESS OR WHO ARE OTHERWISE IN POOR PHYSICAL CONDITION ARE AT HIGHER RISK FOR HEAT INJURY.

B. DEHYDRATION CAN WORSEN OVER SEVERAL DAYS OF HEAT EXPOSURE. ACCLIMATIZATION INCREASES WATER REQUIREMENTS. DEHYDRATION CAN OCCUR IF FLUID INTAKE IS NOT PROPORTIONATELY INCREASED. ENSURE THAT SOLDIERS ACHIEVE ADEQUATE HYDRATION THE NIGHT BEFORE STRENUOUS ACTIVITIES. HEAT STRESS ACCUMULATES DURING SEQUENTIAL DAYS OF STRENUOUS ACTIVITY AND CAN BE DEADLY.

C. SALT TABLETS ARE UNNECESSARY. ENCOURAGE SOLDIERS TO EAT REGULAR MEALS TO REPLACE SALT.

D. CERTAIN DIETARY SUPPLEMENTS (ESPECIALLY EPHEDRA) AND MEDICATIONS (SOME COLD AND ALLERGY REMEDIES) CAN INCREASE THE RISK OF HEAT INJURIES. ALCOHOL USE INCREASES DEHYDRATION.

E. PREVENTIVE MEDICINE PERSONNEL ARE AVAILABLE TO SUPPORT YOU IN YOUR EFFORTS TO IMPROVE AND MONITOR YOUR HEAT INJURY PREVENTION PROGRAM. MAKE SURE THAT ALL HEAT ILLNESS AND INJURIES ARE REPORTED.

6. TREATMENT OF HEAT INJURY. LEADERS MUST TAKE ADDITIONAL ACTIONS TO PROPERLY CARE FOR HEAT CASUALTIES. PROPER TREATMENT IN THE FIELD AND TIMELY EVACUATION CAN BE LIFE-SAVING.

A. REVIEW EVACUATION PLANS TO INCLUDE AN ACCURATE ESTIMATE OF THE TIME REQUIRED TO EVACUATE A CASUALTY FROM THE FIELD SITE TO THE POINT OF DEFINITIVE MEDICAL CARE.

B. ON SITE, THE HEAT CASUALTY SHOULD BE IMMEDIATELY TREATED WITH ORAL FLUIDS AND BODY COOLING. THE SOLDIER

SHOULD BE ENCOURAGED TO DRINK WATER (NOT TO EXCEED ONE AND ONE-HALF QUARTS PER HOUR). IF THE SOLDIER CANNOT DRINK, HE SHOULD BE TREATED WITH IV FLUIDS, IF AVAILABLE, AND EVACUATED IMMEDIATELY. BODY COOLING CAN BE ACCOMPLISHED BY REMOVAL OF OUTER CLOTHING, FANNING, AND SPRAYING OR PARTIAL IMMERSION IN COOL WATER. THIS TREATMENT SHOULD BE CONTINUED FOR NO MORE THAN 20 MINUTES BEFORE EVALUATING THE RESPONSE.

C. DISTINGUISHING BETWEEN THE SYMPTOMS OF MINOR HEAT INJURY AND LIFE-THREATENING HEAT STROKE CAN BE DIFFICULT. SEVERE HEAT INJURY, INCLUDING HEAT STROKE, USUALLY CAUSES DISORIENTATION, CONFUSION, DIZZINESS, COLLAPSE, OR LOSS OF CONSCIOUSNESS. IF ANY OF THESE SYMPTOMS PERSIST FOR MORE THAN A FEW MINUTES, THE CASUALTY MUST BE IMMEDIATELY EVACUATED FOR DEFINITIVE MEDICAL EVALUATION AND TREATMENT.

7. ADDITIONAL INFORMATION: THE US ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE WEB PAGE: HTTP://CHPPM-WWW.APGEA.ARMY.MIL/HEAT/ HAS HEAT INJURY PREVENTION INFORMATION. THE US ARMY SAFETY CENTER (HTTP://SAFETY.ARMY.MIL) PUBLISHES "COUNTERMEASURES", A MONTHLY SAFETY BULLETIN. THE APRIL ISSUE ADDRESSES HEAT INJURY PREVENTION (E-MAIL: COUNTERMEASURE@SAFETY.ARMY.MIL). THE US ARMY INSTITUTE OF ENVIRONMENTAL MEDICINE (USARIEM) CAN BE REACHED AT: (508)-233-4811.

8. THE POC FOR THIS MESSAGE IS LTC REGINA CURTIS, PREVENTIVE MEDICINE STAFF OFFICER, PROPONENCY OFFICE FOR PREVENTIVE MEDICINE, THE OFFICE OF THE SURGEON GENERAL. COMM: (703) 681-3017, DSN: 761-3017, E-MAIL: REGINA.CURTIS@ OTSG.AMEDD.ARMY.MIL.